

**IN THE CLAIMS:**

Please amend the claims as set forth below. This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-55. (Canceled).

Claim 56 (Currently Amended): A substrate dividing method comprising the steps of:  
irradiating a laser light incident face of a substrate with laser light while positioning a light-converging point within the substrate, so as to form a modified region only within the ~~substrate without forming a groove due to melting on a laser light incident face of the substrate, and causing~~ substrate, the modified region ~~to form~~ forming a starting point region for cutting the substrate inside the substrate ~~by~~ at a predetermined distance from the laser light incident face of the substrate; and

grinding the substrate after the step of forming the starting point region ~~for cutting~~ such that ~~the modified region remains in~~ the substrate comprises at least a portion of the modified region; and

dividing the substrate, wherein the substrate is ~~cut~~ divided when a fracture generated in a thickness direction of the substrate from the starting point region for cutting reaches a ~~front~~ the laser light incident face and a rear face of the substrate.

Claim 57 (Previously Presented): A substrate dividing method according to claim 56, wherein the substrate is a semiconductor substrate.

Claim 58 (Previously Presented): A substrate dividing method according to claim 57, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 59 (Previously Presented): A substrate dividing method according to claim 56, wherein the modified region is a molten processed region.

Claim 60 (Previously Presented): A substrate dividing method according to claim 56, wherein the substrate is an insulating substrate.

Claim 61 (Previously Presented): A substrate dividing method according to claim 56, wherein the front face of the substrate is formed with a functional device; and  
wherein the rear face of the substrate is ground in the step of grinding the substrate.

Claim 62 (Previously Presented): A substrate dividing method according to claim 56, wherein the step of grinding the substrate includes a step of subjecting the rear face of the substrate to chemical etching.

Claim 63 (Previously Presented): A substrate dividing method according to claim 56, wherein the modified region includes a crack region.

Claim 64 (Previously Presented): A substrate dividing method according to claim 63, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 65 (Previously Presented): A substrate dividing method according to claim 56, wherein the modified region includes a refractive index change region which is a region with a changed refractive index.

Claim 66 (Previously Presented): A substrate dividing method according to claim 65, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1 ns or less.

Claim 67 (Previously Presented): A substrate dividing method according to claim 56, wherein the substrate is made of a piezoelectric material.

Claim 68 (Previously Presented): A-substrate dividing method according to claim 67, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 69 (Currently Amended): A substrate dividing method according to claim 56, wherein the substrate is ~~ent~~ divided into a plurality of chips along lines along which the substrate is ~~ent~~ divided and the lines being arranged in a lattice for the substrate.

Claim 70 (Currently Amended): A substrate dividing method according to claim 56, wherein the substrate is ~~ent~~ divided when the fracture reaches the front face and the rear face of the substrate after the step of grinding the substrate.

Claim 71 (Currently Amended): A substrate dividing method according to claim 56, wherein the substrate is ~~ent~~ divided when the fracture reaches the front face and the rear face of the substrate in the step of grinding the substrate.

Claim 72 (Currently Amended): A substrate dividing method comprising the steps of: irradiating a laser light incident face of a substrate with laser light while positioning a light-converging point within the substrate, so as to form a modified region only within the substrate ~~without forming a groove due to melting on a laser light incident face of the~~ substrate, and ~~causing the modified region to form~~ forming a starting point region for cutting the substrate inside the substrate ~~by at~~ a predetermined distance from the laser light incident face of the substrate; and

grinding the substrate after the step of forming the starting point region ~~for cutting such~~ that to remove the modified region ~~does not remain in~~ from the substrate and such that the substrate comprises at least a portion of a fracture generated in a thickness direction of the

substrate from the starting point region for cutting at least a portion of a fracture generated in a thickness direction of the substrate from the starting point region for cutting remains in the substrate; and

dividing the substrate, wherein the substrate is cut divided when the fracture reaches a front the laser light incident face and a rear face of the substrate.

Claim 73 (Previously Presented): A substrate dividing method according to claim 72, wherein the substrate is a semiconductor substrate.

Claim 74 (Previously Presented): A substrate dividing method according to claim 73, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 75 (Previously Presented): A substrate dividing method according to claim 72, wherein the modified region is a molten processed region.

Claim 76 (Previously Presented): A substrate dividing method according to claim 72, wherein the substrate is an insulating substrate.

Claim 77 (Previously Presented): A substrate dividing method according to claim 72, wherein the front face of the substrate is formed with a functional device; and

wherein the rear face of the substrate is ground in the step of grinding the substrate.

Claim 78 (Previously Presented): A substrate dividing method according to claim 72, wherein the step of grinding the substrate includes a step of subjecting the rear face of the substrate to chemical etching.

Claim 79 (Previously Presented): A substrate dividing method according to claim 72, wherein the modified region includes a crack region.

Claim 80 (Previously Presented): A substrate dividing method according to claim 79, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 81 (Previously Presented): A substrate dividing method according to claim 72, wherein the modified region includes a refractive index change region which is a region with a changed refractive index.

Claim 82 (Previously Presented): A substrate dividing method according to claim 81, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1 ns or less.

Claim 83 (Previously Presented): A substrate dividing method according to claim 72, wherein the substrate is made of a piezoelectric material.

Claim 84 (Previously Presented): A substrate dividing method according to claim 83, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 85 (Currently Amended): A substrate dividing method according to claim 72, wherein the substrate is ~~ent~~ divided into a plurality of chips along lines along which the substrate is ~~ent~~ divided and the lines being arranged in a lattice for the substrate.

Claim 86 (Currently Amended): A substrate dividing method according to claim 72, wherein the substrate is ~~ent~~ divided when the fracture reaches the front face and the rear face of the substrate after the step of grinding the substrate.

Claim 87 (Currently Amended): A substrate dividing method according to claim 72, wherein the substrate is ~~ent~~ divided when the fracture reaches the front face and the rear face of the substrate in the step of grinding the substrate.

Claim 88 (Currently Amended): A method of manufacturing a semiconductor device formed using a substrate dividing method, the manufacturing method comprising the steps of:  
irradiating a laser light incident face of a substrate, the substrate comprising semiconductor material and having a surface formed with at least one semiconductor device, with laser light while positioning a light-converging point within the substrate, so as to form a

modified region only within the substrate ~~without forming a groove due to melting on a laser light incident face of the~~ substrate, the modified region forming a starting point region for cutting the substrate, the modified region being located inside the substrate ~~by at~~ a predetermined distance from the laser light incident face of the substrate; and

grinding the substrate after the step of forming the starting point region ~~for cutting~~ such that ~~the modified region remains in the substrate~~ comprises at least a portion of the modified region; and

dividing the substrate, wherein the substrate is ~~cut~~ divided when a fracture generated in a thickness direction of the substrate from the starting point region for cutting reaches a ~~front~~ the laser light incident face and a rear face of the substrate in order to provide at least one manufactured semiconductor device.

Claim 89 (Previously Presented): A method of manufacturing a semiconductor device according to claim 88, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 90 (Previously Presented): A method of manufacturing a semiconductor device according to claim 88, wherein the modified region is a molten processed region.



Claim 91 (Previously Presented): A method of manufacturing a semiconductor device according to claim 88, wherein the front face of the substrate is formed with a functional device; and

wherein the rear face of the substrate is ground in the step of grinding the substrate.

Claim 92 (Previously Presented): A method of manufacturing a semiconductor device according to claim 88, wherein the step of grinding the substrate includes a step of subjecting the rear face of the substrate to chemical etching.

Claim 93 (Previously Presented): A method of manufacturing a semiconductor device according to claim 88, wherein the modified region includes a crack region.

Claim 94 (Previously Presented): A method of manufacturing a semiconductor device according to claim 93, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 95 (Previously Presented): A method of manufacturing a semiconductor device according to claim 88, wherein the modified region includes a refractive index change region which is a region with a changed refractive index.

Claim 96 (Previously Presented): A method of manufacturing a semiconductor device according to claim 95, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1 ns or less.

Claim 97 (Currently Amended): A method of manufacturing a semiconductor device according to claim 88, wherein the substrate is ~~not~~ divided into a plurality of chips along lines along which the substrate is divided and the lines being arranged in a lattice for the substrate.

Claim 98 (Currently Amended): A method of manufacturing a semiconductor device according to claim 88, wherein the substrate is ~~not~~ divided when the fracture reaches the front face and the rear face of the substrate after the step of grinding the substrate.

Claim 99 (Currently Amended): A method of manufacturing a semiconductor device according to claim 88, wherein the substrate is ~~not~~ divided when the fracture reaches the front face and the rear face of the substrate in the step of grinding the substrate.

Claim 100 (Currently Amended): A method of manufacturing a semiconductor device formed using a substrate dividing method, the manufacturing method comprising the steps of:  
irradiating a laser light incident face of a substrate, the substrate comprising semiconductor material and having a surface formed with at least one semiconductor device, with laser light while positioning a light-converging point within the substrate, so as to form a

modified region only within the substrate ~~without forming a groove due to melting on a laser light incident face of the~~ substrate, the modified region forming a starting point region for cutting the substrate, the modified region being located inside the substrate ~~by~~ at a predetermined distance from the laser light incident face of the substrate; and

grinding the substrate after the step of forming the starting point region ~~for cutting such that the modified region does not remain in the substrate and at least a portion of a fracture generated in a thickness direction of the substrate from the starting point region for cutting remains in the substrate~~ to remove the modified region from the substrate such that the substrate comprises at least a portion of a fracture generated in a thickness direction of the substrate from the starting point region for cutting;

dividing the substrate, wherein the substrate is ~~cut~~ divided when the fracture reaches a ~~front the laser light incident~~ face and a rear face of the substrate in order to provide at least one manufactured semiconductor device.

Claim 101 (Previously Presented): A method of manufacturing a semiconductor device according to claim 100, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 102 (Previously Presented): A method of manufacturing a semiconductor device according to claim 100, wherein the modified region is a molten processed region.

Claim 103 (Previously Presented): A method of manufacturing a semiconductor device according to claim 100, wherein the front face of the substrate is formed with a functional device; and

wherein the rear face of the substrate is ground in the step of grinding the substrate.

Claim 104 (Previously Presented): A method of manufacturing, a semiconductor device according to claim 100, wherein the step of grinding the substrate includes a step of subjecting the rear face of the substrate to chemical etching.

Claim 105 (Previously Presented): A method of manufacturing a semiconductor device according to claim 100, wherein the modified region includes a crack region.

Claim 106 (Previously Presented): A method of manufacturing a semiconductor device according to claim 105, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1  $\mu$ s or less.

Claim 107 (Previously Presented): A method of manufacturing a semiconductor device according to claim 100, wherein the modified region includes a refractive index change region which is a region with a changed refractive index.

Claim 108 (Previously Presented): A method of manufacturing a semiconductor device according to claim 107, wherein the substrate is irradiated with the laser light under a condition with a peak power density of at least  $1 \times 10^8$  (W/cm<sup>2</sup>) at the light-converging point and a pulse width of 1 ns or less.

Claim 109 (Currently Amended): A method of manufacturing a semiconductor device according to claim 100, wherein the substrate is ~~cut~~ divided into a plurality of chips along lines along which the substrate is divided and the lines being arranged in a lattice for the substrate.

Claim 110 (Currently Amended): A method of manufacturing a semiconductor device according to claim 100, wherein the substrate is ~~cut~~ divided when the fracture reaches the front face and the rear face of the substrate after the step of grinding the substrate.

Claim 111 (Currently Amended): A method of manufacturing a semiconductor device according to claim 100, wherein the substrate is ~~cut~~ divided when the fracture reaches the front face and the rear face of the substrate in the step of grinding the substrate.